# Exhibit 8 Part C

ary information such as commentary which can be added to aid interpretation. Each of these sources is interconnected and relevant to the other in terms of both past and present information. This may also apply to future information in terms of bills or other forms of uncommenced legislation. It 5 is the association of this relevance and interconnection that is advantageous to the end user.

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In FIG. 4, the X-, Y-, and Z-axes indicate time (Time), the legislative provision (location), and type (eg, legislation=L, cases=C, and journal articles=J). To simplify the diagram, 10 only three axes are illustrated, however, other axes may be included dependent upon the number of dimensions of the space. In the first embodiment, the multidimensional space also includes another three axes: jurisdiction=U, subject-V, and depth=W. Thus, the space according to the first embodiment has six dimensions. In the six-dimensional case, it is possible to move along each axis and at the points of intersection change direction, as well as find and/or follow new or additional information.

The end user begins at legislation (L) along the Z-axis, 20 where the Fences 10 and Boundaries Act is located and then selects Section 1 of legislation (indicated by L allowing the Z-axis) at node 402, as of 1 Jan. 1996. The user then follows a path in the legislation through nodes 404, 406 and 408 for Sections 2, 3 and 4, respectively, as of that same date (ie, the 25 Y-axis), to find a definition of the term "fences". Node 408 contains Section 4 at 1 Jan. 1996 which contains the current definition of "fences". This would provide information in response to above query (1).

The user then selects Section 4 of the legislation as of 1 30 Jan. 1995, which in this case is an earlier version of the section prior to amendment, by moving to node 410 (along the X-axis). This provides information about the prior law for above query (2). The user can then move to other information on Section 4 as of 1 Jan. 1995 by going to nodes 35 412 and 414 for case and journal article information, respectively, along the Z-axis. For example, a case on the earlier Section 4 might be identified at node 412 and articles on interpretation of Section 4 at node 414. The foregoing is only one possible route through the multidimensional space of 40 information. Other more complicated and interrelated pathways involving axes U, V and W are possible. For example, the user can move to axis U (jurisdiction) and compare the definition in Section 4 of New South Wales with that in another jurisdiction (eg, Victoria).

FIG. 6 is a flow diagram illustrating the method of electronic publishing according to the first embodiment. A data source 602, preferably for legal information, is provided. In steps 604 and 606, base data and new data are input from the data source 602, respectively, and in step 608 the 50 data is captured. The DTDs 610 are input to step 612. The DTDs 610 include Act.DTD, Acts.DTD, Reg.DTD, Regs.DTD, and Common.ELT, which are shown in detail in Appendix B. In step 612, the DTDs 610 are applied to the captured data from step 608. In step 614, the data is coded 55 in SGML, including the Time Base Code. In step 616, the data is consolidated. As indicated in FIG. 6, steps/items 602 to 616 comprise the (first) data conversion stage.

A data management database 620 is provided to step 618. The database is based on a master table and a textblock table 60 (see Appendix C for further detail). The output of step 616 is also provided to step 618. In step 618, the data is consolidated; the data is stored as multiple versions, if applicable, and uses the predefined portions of data (ie, textblocks). In step 622, a filter program(s) is applied to the 65 consolidated data to convert the data from SGML to the relevant format for the retrieval software application, includ-

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ing Folio Views, DynaText, Topic, HTML, and the like. Steps/item 618 to 622 comprise the (second) data management stage.

The filtered data output by step 622 can then be provided to step 624. In step 624, the filter consolidated data is imported to the text retrieval software. In step 626, the data is provided to the delivery medium, which may include CD-ROM, DVD, tape, electronic online services, and other media. The output of this is the end user product 628. Steps/item 624 to 628 comprise the (third) product manufacture stage.

The first embodiment is preferably practiced using a conventional general-purpose computer, such as the one shown in FIG. 5, wherein processes for providing and managing the information are carried out using software executing on the computer. In particular, the legislation database, the database and the DTD(s) may be stored after a filtering process on a CD-ROM used by the computer system, and the computer system is operated using Folio View. The computer system 500 includes a computer 502, a video display 516, and input devices 518. A number of output devices, including line printers, laser printers, plotters, and other reproduction devices, can be connected to the computer 502. Further, the computer system 500 can be connected to one or more other computers using an appropriate communication channel such as a modem communications path, a computer network, or the like.

The computer 502 consists of a central processing unit 504 (simply, processor hereinafter), an input/output interface 508, a video interface 510, a memory 506 which can include random access memory (RAM) and read-only memory (ROM), and one or more storage devices generally represented by a block 512 in FIG. 5. The storage device(s) 512 can consist of one or more of the following: a floppy disc, a hard disc drive, a magneto-optical disc drive, CD-ROM or any other of a number of non-volatile storage devices well known to those skilled in the art. Each of the components 504 to 512 is typically connected to one or more of the other devices via a bus 514 that in turn can consist of data, address, and control buses.

The video interface **510** is connected to the video display **516** and provides video signals from the computer **502** for display on the video display **516**. User input to operate the computer **502** can be provided by one or more input devices. For example, a operator can use the keyboard **518** and/or a pointing device such as the mouse to provide input to time computer **502**. Exemplary computers on which the embodiment can be practiced include Macintosh personal computers, Sun SparcStations, and IBM-PC/ATs and compatibles.

In an alternate embodiment of the invention, the computer system 500 can be connected in a networked environment by means of an appropriate communications channel. For example, a local area network could be accessed by means of an appropriate network adaptor (not shown) connected to the computer, or the Internet or an Intranet could be accessed by means of a modem connected to the I/O interface or an ISDN card connected to the computer 502 by the bus 514. In such a networked configuration, the electronic publishing system can be implemented partially on the user's computer 500 and a remote computer (not shown) coupled over the network. The legislation database, the database and the DTD(s) can be implemented on the remote computer and the computer system 500 can be operated using Folio View.

The operation of the first embodiment is described with reference to the screen shots shown in FIGS. 7 to 17. All screen shots are derived from the first embodiment which uses Folio Views as the retrieval software. Broadly, FIGS. 7

to 15 are screen shots illustrating navigation or movement around the information. FIGS. 16 and 17 are screen shots that show search capacities.

FIG. 7 shows the opening screen 700, which the end user sees when the program is started. The interface is a standard windows interface featuring drop menus that provide access to all functions. The functions include basic searching and customised search templates such as the ones shown in FIGS. 16 and 17 that allow users to exploit time-based and multidimensional searching.

The title screen **702** is presented when the process is commenced and is the first screen. A customisable toolbar **704** is provided for searching functions. Also, drop menus **706** are provided above the toolbar **704**. In the lower portion of the screen **700** contains a status bar **708** showing information relevant to searching. The Start and Main menu buttons **710** in FIG. **7** are both navigational tools. The Start button takes a new user to information providing help on how to use the invention. The Main Menu button takes the end user to the menu shown in the second screen shot of 20 FIG. **8** 

FIG. 8 shows a main selection menu 800. At this menu 800, the user can see the currency of the total information. The user is also able to make broad choices as to the type of information that the person might like to see. All items 25 preceded by bullet points in the menu are jump links 802 which lead the user to further menus for the items selected. The jump links 802 also provide a uniform or consistent form of movement. Thus, if searching the Social Security Act, selecting the first jump link "Find an Act" takes the user 30 to the next screen which would be the "Act Name Menu".

FIG. 9 shows the "Act Name Menu" screen 900. In this menu 900, all letter buttons are links 904 to Acts beginning with the letter selected. That is, the jump links 904 allow access to sub-menus for Acts with the corresponding 35 selected letter. If "S" is clicked, this leads to the "Acts beginning with S" menu (see FIG. 10) where an entry linked to the most current version of the Social Security Act 1991 appears. A similar menu may be provided for Regulations. Further, locational information 902 is provided in the upper 40 portion of the screen 900.

FIG. 10 illustrates acts beginning with "S", as selected in the screen 900 of FIG. 9. By selecting jump link 1002, the Social Security Act can be accessed. Likewise, other acts in this screen 1000 may be accessed using the respective jump 45 link (e.g. Safety, Rehabilitation and Compensation Act.

Assuming the appropriate jump link 1002 is selected in FIG. 10, FIG. 11 shows how the beginning of the Social Security Act appears in screen 1100, and the buttons that link the user to the provisions of the Act. This is the start of the 50 most current version of the Social Security Act preferably. From this screen, provisions of the Act can be accessed. By accessing the Table of Provisions box, the Table of Provisions menu can be accessed. FIG. 12 shows the Table of Provision, say Section 4, can be accessed again using links 1206. Different sections of the Act (e.g. ss 3, 4 and 6A) may be accessed as well using corresponding jump links. Again, location information 1202 is provided in the upper portion of the screen. A return button 1204 is also provided that 60 provides access back to the beginning of the Act.

FIG. 13 shows screen 1300 containing the Time Base Toolbar 1302, which preferably provides eight buttons for accessing time based information. This Toolbar 1302 is not a feature of Folio Views, but is a designed addition added to 65 Folio Views by the first embodiment. It is made possible by the way in which the publication data is coded. The Section

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Information button 1304 takes the user to an overview of information. The Previous, Next and All buttons 1306 allows the user to have access to the previous, next and all versions of the relevant section. The Subject, Jurisdiction and Related Info buttons 1308 allow the user to view and access sections dealing with a similar subject, or similar sections in other jurisdictions, or related information such as cases and articles on or about the section. This Toolbar 1302 allows a user to cycle through previous and subsequent versions of sections and as shown in screens in FIGS. 14 and 15 to refer to the text of sections amending the section. As well, the user can also call to the screen all versions of the section as one view (or display) using the "ALL" button.

FIG. 14 illustrates a screen 1400 which appears when the user selects the Section information button 1402 (button 1304 in FIG. 13). The resulting popup screen illustrates the time period or date range 1404 covered by this version of section 4. It also indicates the Year and Number jump link 1406 to text of the amending act which created this version of section 4.

FIG. 15 illustrates a screen 1500 which appears when the user selects the previous button 1502 (not shown—it is located behind the popup screen), which corresponds to previous button 1306 of FIG. 13. This shows an earlier version of section 4 that the user can access by using the previous button 1502. The pop-up screen indicates that this version covers a different time span than that shown in FIG. 14.

The screen shots in FIGS. 7 to 15 display a step-through or navigation-based way of locating information. There is also the more direct approach of searching for terms using text retrieval. The screen shots in FIGS. 16 and 17 illustrate such searching provided by the first embodiment. Screen 1600 shown in FIG. 16 provides a customised search template 1602 that includes a time base option allowing a user to search for versions of a section, for example. Screen 1700 shown in FIG. 17 illustrates a customised search template 1702 for case law which includes a time base option connecting cases to legislation at a particular date, for example. Again, the ability to relate such to time and then to mix and match types of information from different sources jurisdictions) is a feature provided by the coding technique used for the data and not the Folio Views software used to deliver the data to the end user.

#### Second Embodiment

The second embodiment stores all the information in a single repository which is marked up in SGML or XML. The information is divided in that repository into suitable pieces or blocks of text (as described in the first embodiment) and any relevant markup marks up a whole suitable piece or block of text by (a) choosing suitable pieces or blocks of text, and (b) demanding that relevant markup belongs to a whole suitable piece or block of text, the following becomes possible. A relational database consisting of records consisting of fields can be created with one and only one record per suitable piece or block of text where the actual text of each suitable piece or block of text is the content of one filed of the above record and where each item of the markup is assigned its own field in the above record.

For example, a version of Section 6 of the Income Tax Assessment Act (ITAA) **1936** may be stored as a record in the above relational database, The first field of that record contains the actual text of that version of Section 6. The next field identifies it as Section 6 of the ITAA, the next field gives the date this version came into being, the next field

contains the section of the amending act that created this particular version, the next field contains the day this version became superseded, another field contains the subject(s) this version addresses, another field contains the case(s) that have addressed this version of section 6 and so on. Storing 5 the data in this way allows multidimensional database techniques to be applied to the data.

An XML DTD for implementing the second embodiment is set forth in Appendix E. It will be apparent to one skilled in the art that the second embodiment may be readily 10 implemented in view of the foregoing description of the first embodiment, which is not repeated here for the purpose of brevity, and in view of the accompanying DTD set out in Appendix E.

The foregoing only describes a small number of embodi- 15 ments of the invention, and modifications and changes apparent to those skilled in the art can be made thereto without departing from the scope and spirit of the invention. For example, the embodiments of the invention have been alternatively be practiced with the extensible markup language (XML) as well. Also, the embodiments may alternatively be practiced with a Style Sheet Mechanism (SSM) instead of, or in addition to, one or more DTDs.

A method, apparatus and computer program product for 25 navigating in a multidimensional space containing an electronic publication formed from predefined portions of textbased data encoded using a markup language are disclosed. In the following description, numerous specific details are set forth. However, it will be apparent to those skilled in the 30 art in view of this disclosure that changes may be made without departing from the scope and spirit of the invention. In other instances, well known features have not been described in detail so as not to obscure the invention. Whilst the invention may be preferably practised on flat files, it will 35 be apparent to a person skilled in the art that the invention may also be practised on databases. A database may be constructed from sets of flat file records. A relational database is a collection of related tables, each table being a set of flat files having the same structure. The method includes 40 the step of: displaying a selected one of the predefined portions in a first display region. The display region preferably takes the form of an area of real estate on a computer screen (henceforth referred to as the "content frame"). The method also includes the step of displaying a view into a 45 primary axis of the multidimensional space in which the displayed preferred portion is clearly marked. This second area of the computer screen shall be referred to as the "reference frame". Each frame has an associated "anchor", which is a title bar clearly indicating the nature of the view 50 currently displayed in the frame. The reference anchor also contains tools for navigating the displayed axis. The method also includes the step of displaying a point on a primary axis of the multidimensional space for the displayed predefined

The method may be enhanced by displaying a second point on a second axis which relates to the first axis at the first point. The second axis represents time-based versions of the selected one of the predefined portions. Alternatively, the second axis represents amending legislation that was applied 60 to the selected one of the predefined portions. In another example, the second axis represents case law that applied the selected one of the predefined portions. In further example, the second axis represents annotations to the selected one of the redefined portions. In a yet further example, the second 65 axis represents entries of a subject index that are covered in the selected one of the predefined portions.

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The embodiment of the present invention allows for a primary axis (the combined hierarchical/sequential or normal axis). A "base node" may be selected by navigating the primary axis. The method then allows for one of a number of potential axes (associated with the base node) to be selected and subsequently navigated. The selection is accomplished by means of activating "links" in the displayed base node. The reference frame is redrawn to give a view of the members of the selected axis and one member of that axis is displayed. At any point it is possible to return to the primary axis and select a new base node. Alternatively, the currently displayed base node may be chosen as a new base node from which subsequent axes are derived. In this manner, any number of axes may be displayed and navigated without increasing the complexity of the screen view (i.e. only two frames are ever required). It is this quality which allows a complex dataset to be navigated by a non-specialist end user.

By way of example, a user may select a first node, described with reference to SGML. The embodiments may 20 corresponding to a provision, in the multidimensional space. The first node's locator is displayed in a first anchor to provide the user with a first point of reference. If the user is interested in different versions of the provision, the user may then move to second node on an orthogonal axis, being the Versions axis. The first anchor is updated and displays the locator of the second node. A second anchor displays the locator of the first node. The second anchor also displays the relationship between the first node and the second node. The user is provided with information which indicates the original provision that was being studied, the provision currently being studied and the current provision's relationship to the original provision. Thus, the first and second anchors and the information provided therein enable the user to navigate the multidimensional space.

> Where reference is made in any one or more of the accompanying drawings to steps and/or features, which have the same reference numerals, those steps and/or features have for the purposes of this description the same function(s) or operation(s), unless the contrary intention

The principles of the preferred method described herein have general applicability to electronic publishing. However, for ease of explanation, the steps of the preferred method are described with reference to navigating in a MALT publication. However, it is not intended that the present invention be limited to the described method. It will be appreciated by those skilled in the art that a publication could include a document or a database. The invention may apply to any hierarchical XML data where any of the nodes may change independently of other nodes in the hierarchy. Typical examples might include manuals and newspapers. For example, the invention may have application to the production and display of aircraft manuals. In this case, each node would be a set of maintenance instructions for a part or 55 assembly. The axes might be part number; category (electrical, structural, etc.); location (Boeing 737, wing, wingtip assembly, eddy baffle, securing flange AX-703); airline (United, QANTAS); language (English, French). Since each commercial aircraft is in effect a one-off construct, the basic information needs to be reconfigured for each plane, each airline, etc.

Before proceeding with a description of the embodiments, a brief review of terminology is discussed hereinafter. A dataset refers to the complete set of data that is to be navigated. A dataset has a complete set of discrete objects called nodes. The dataset may be viewed as a sparse multidimensional matrix, as is produced using the MALT pub-

lishing method. In the example of this specification, the dataset preferably refers to a body of legislation designed for point in time searching.

A node preferably corresponds to a particular legislative provision at a particular date. A base node is a particular 5 node from which one or more viewing axes may be derived.

A viewing axis is an ordered set of nodes derived from a single base node. The base node itself may or may not constitute part of the axis. For example, given a particular provision in time, three possible viewing axes are: the set of 10 all provisions in force on the same date as the base node; the set of versions of the base provision in time; and the set of amending provisions most recently applied to the base provision. Further viewing axes may be practised, and may include case law that applied the provision, annotations to 15 the provision and entries of a subject index that are covered in the provision.

A provision, for the purposes of this system, is a unit of legislation having a heading and/or content, but not including text belonging to any sub-provision that is a predefined 20 portion of text. A provision may be an Act, a schedule, a chapter, a section or other legislative unit. A provision has a scope in time, such that when a provision is amended, a new provision is created. A provision corresponds to a set of nodes, each node corresponding to a range of dates in the 25 scope of the provision.

Scope refers to a period of time during which a provision is in force. Thus, a given scope is usually expressed as start and end dates. A provision's scope is determined by the dates on which the provision commenced, was amended <sup>30</sup> and/or was repealed.

A locator is an identifier that is used to locate a particular node. For example, a locator may be a date, or a position such as the name of an Act and a section number.

## Multi-axis Viewing Interface

Using the publication of legislation as an example, a provision is defined as being an amendable unit of legislation. At any given moment, the body of active legislation can be divided into provisions. Provisions also have a scope in time, so that when a provision is amended, the current provision goes out of scope and a new provision is created. The nodes of the dataset in this example are provisions with an associated date. Two locators are required to specify a particular node uniquely: a position (such as act and section 45 number) and a date.

There are a number of viewing axes associated with each node. As indicated in the explanation of terminology above, a viewing axis is defined as an ordered set of nodes that can be derived from the current node. When XML data is 50 converted to a series of flat files, viewing axes are derived from the current node as a result of an intersection between two flat files. Two flat files intersect if common entries are contained in the fields of the respective flat files. For example, a legislation flat file may contain a field "identifiers 55 of cases that apply this provision". The legislation flat file shares a common entry with a case law flat file. Alternatively, the legislation flat file may contain a field "subjects covered in the provision". In this example, the legislation flat file shares a common entry with a subject index flat file. 60 Alternatively, an amending legislation flat file may have a field "Identifiers of provisions amended by this provision" and share a common entry with the legislation flat file.

In a preferred example, seven such viewing axes are: Sequential (...; s 26; s 27; s 27A; ...), Hierarchical (...; Corporations Act 1989; Part 2; Division 2.1; s 27),

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Temporal (the set of versions of the current provision In time).

Source (the set of provisions which amend the current provision),

Case law (cases that apply the current provision), Annotations (annotations to the current provision), and Subject (Entries of a subject index that are covered in the current provision).

The above axes are orthogonal in the sense that none can be directly derived from another. Thus, the temporal axis cannot be derived from the sequential axis. Moreover, members of the temporal axis are not simply those provisions sharing the same locator as the current provision. As a result of renumbering, members of the same temporal axis may possibly have widely differing locations. While the example uses two locators and four viewing axes, the MALTweb interface is capable of handling as many locators and axes as required.

Having utilised MALT to construct a set of data encapsulating the above relationships, the problem is how to access this data in a meaningful way. To provide an untrained user with full multi-axis access to MALT type data whilst maintaining a consistent look and feel throughout, a view consisting of a two frame screen is provided.

FIG. 18 is a screenshot 1800 depicting a section of legislation in accordance with an embodiment of the invention. A content frame 1810 displays the content of the current node. In essence, this frame 1810 constitutes a known portion of display "real estate". In the example of FIG. 18, the node corresponds to Section 59 of the Commonwealth Corporations Act 1989 and the node has a scope of 16 Oct. 1995 onwards. The scope indicates the time during which the provision is in force. The content anchor 1805 of the content frame 1810 displays the locators for the current content provision in a user friendly form, such as:

Corporations Act 1989 (Cth): s 59

Scope: 16 Oct. 1995 onwards

Situated above the content anchor 1805 is a reference frame 1820, which contains a set of links 1821 corresponding to the members of a viewing axis associated with the current base node. Reference markers 1823 indicate which of the links 1821 is currently selected. In the Normal view, the content node shown in the content frame is always the same as the base node for the reference frame. In the Version view, the content node and base node are initially the same, but deviate when a different version is selected. In the Source view, the base node is being amended and the content node is one of the amending provisions.

The reference frame 1820 has a corresponding reference anchor 1815, which describes the current viewing axis and provides buttons 1816, 1818 for navigating the sequential axis and button 1817 for accessing higher levels of the hierarchy. These levels can also be accessed via the links 1821 in the reference frame. In the example, the reference anchor 1815 indicates that the user is being shown a normal view of s59, as in force on 20 Jul. 2000. This view also shows the search mode, in which the text "exercise of jurisdiction" has been located. The buttons 1812, 1813 allow access to the next or previous occurrence of this text, whilst button 1814 cancels the search. The "hits" links 1822 in the reference frame allow rapid access to occurrences of the search text in other parts of the document. In this respect, the search mode acts very much like a separate viewing axis.

The highlighting 1806 indicates the selected text. Finally, the links 1807, 1808 allow access to the other viewing axes (in this case, Versions and Amendments).

Where appropriate, the reference anchor **1815** may indicate the base node of the viewing axis. The base node is the node from which the viewing axis is derived. For example, the reference anchor **2015** of FIG. **20**, which shows a Source axis view of the same provision depicted in FIG. **18**, displays the following information:

Provisions amending (effective 16 Oct. 1995)

Corporations Act 1989 (Cth): s 59

This indicates that the Source axis being viewed by the 15 user is derived from the base provision: Corporations Act, s59 [16 Oct. 1995 onwards]. The content anchor **2005** details the amending provision, which in this example is Corporations Legislation Amdt Act 1994 (Cth):Sch 1.

The relationship of the base node and the content node 20 depends on the view. In the Normal axis view, consisting of the sequential and hierarchical axes, the base node and the content node are always the same. In the Versions axis view, the base node and the content node may or may not be the same.

A view is, therefore, defined as the display of a particular content node in relation to a specified axis. Each view may be uniquely identified from the following: the current content node, the current viewing axis, and the base node of the viewing axis. To further help the user in distinguishing the 30 different viewing axes, the reference frame links may optionally vary in colour, content and indenting style among the views.

FIG. 19 shows a Version axis view 1900 of the provision depicted in FIG. 18. The content anchor 1905 indicates that 35 the provision being displayed is, in fact, an earlier version of the provision displayed in FIG. 18. Thus, the information shown in the content frame 1910 has a different scope from the information shown in content frame 1810 of FIG. 18. Closer examination of the information of the content frame 40 1910 and the information of content frame 1910 indicates that amendments have in fact been made between the two versions of the provision.

The reference frame **1920** of FIG. **19** indicates that there are two versions of the provision, a first version with a scope of 1 Jan. 1994 to 15 Oct. 1995 and a second version with a scope of 16 Oct. 1995 to 31 Dec. 2001. Each version of the provision is a distinct node on the Version axis. The reference anchor **1915** indicates that the user is navigating along the Versions axis view of section **59**.

FIG. 20 shows a Source axis view 2000 of the provision under consideration. The reference anchor 2015 of FIG. 20 indicates to the user that the material being displayed relates to provisions amending the Corporations Act 1989 (CTH); s 59. The reference frame 2020 indicates that there are three relevant nodes 2021, 2022, 2023 on the source axis. Each node corresponds to a provision which amends the current provision. The amending provisions are not necessarily sequential and may be non-consecutive and/or in different schedules and/or in different Acts. The content anchor 2005 indicates that the current information being shown is Schedule 1, Part 1, Item 15 of the Corporations Legislation Amendment Act 1994, corresponding to the first node 2021 shown in the reference frame 2020. The content of the amending act is displayed in the content frame 2010.

Thus, the multi-access viewing interface provides a user with content and reference components. Anchors uniquely

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identify the content node by position and date, and the viewing axis by base node and axis type. Furthermore, the reference frame is capable of displaying multiple viewing axes for a given base node, as illustrated in FIGS. 18–20.

Higher Level Scoping

The MALT concept encapsulates the ability to store the contents of a sparse multidimensional matrix in a set of flat file records. As previously defined, the scope of a provision is a time period during which the given provision is in force.

A problem arises relating to scoping a record which encompasses a number of lower level records.

Consider as an example legislation marked up for point in time searching. The body of the legislation consists of provisions (or nodes), where each provision is an amendable unit of legislation. For the purposes of this example, each provision possesses the following four properties:

A single parent, or container provision in which the current provision resides. [The children of a provision are those provisions which have the current provision as the parent.]

A position within a provision's parent, and (optionally) an associated locator (eg. the fourth child provision of an Act may have the locator "Chapter 2A").

A scope in time (i.e. start and end dates). The content of the provision.

The provisions are divided into three classes:

A single root node, which has no parent, but from which all other nodes ultimately descend;

A set of terminal nodes, which have no children; and A set of higher level nodes which are neither the root node nor terminal.

The legislation can then be said to form a tree descending from the root node and containing the terminal nodes at the ends of the root node's branches.

The scope of a terminal node is the period of time between the terminal node's start date and end date, inclusive. The root node is deemed to be always in scope. The scope of a node which is neither a terminal node nor a root node is problematic.

For example, a chapter may encompass many sections, but the chapter's actual content, viewed in isolation as a record, is simply the chapter's title, including locator if present, and any notes or other attachments that apply to the chapter as a whole. All other content is contained indirectly via the chapter's descendant provisions, such as parts, sections and the like.

Difficulty arises in determining the scope of the chapter node. In one sense, the scope of the chapter node is the sum of the scopes of the chapter node's descendants. A question then arises if, for example, the chapter's title is altered. The same applies to the case in which the abovementioned notes or other attachments are altered.

One solution is to create a duplicate chapter with the altered title. While effective, this method has some major drawbacks. Firstly, it involves a great deal of unnecessary duplication of material. Since each child provision can have only one parent; new copies of every sub-level have to be made. The scope of both the original and duplicate sublevels then have to be split at the date of the chapter's title change. This in turn requires each sub-level to behave as though amended, even though the amendment only applies to the title of an ancestor level.

A better solution is to create a new terminal sub-level of the chapter which contains just the title and associated text. This sub-level can then be scoped independently of the main

level, and other sub-levels are unaffected. The sub-levels retain the same parent as the chapter level itself was not affected by the amendment.

However, this still leaves open the question of what to do with the scope of the chapter level. Clearly a chapter, like 5 any other provision, can be created or repealed. Thus, an amendment such as "repeal Chapter 2A" should end the scope of the chapter level as well as all of the chapter's descendants.

The editors, however, may wish to leave a stub entry to 10 mark the place of the former chapter thus:

## Chapter 2A

## Repealed

The scope of the stub clearly lies outside the scope of the chapter. There are three possible solutions:

allow the [repealed] entry (which stands in place of a normal title) to live inside the chapter, even though the entry is out of the chapter's scope;

extend the scope of the chapter to encompass the scope of the stub; or

create a new chapter level containing just the stub.

The first option creates significant inefficiencies in the design, since the scope of a sub-level cannot be assumed to lie within the scope of the sub-level's parent. The other two options give rise to potential conflicts between the stub and possible replacement chapters.

Having delegated the title and other general notes to their own sublevels, all content has effectively been removed from the chapter. However, a chapter level is still required, as removing higher levels makes all terminal nodes direct children of the root. This in turn severely impacts on the 35 usefulness of the data when mapped to a hierarchical form, such as XML.

In addition, a higher level does contain one property, namely one or more locators ("Chapter 2A" in the example). While this property can theoretically be delegated to yet 40 another sub-level, the practical implications are significant. In particular, the locator reflects the ordering of the chapter amongst its siblings. If, for example, an amendment renumbers chapter 2A to chapter 4, this gives rise to the issue of whether the chapter comes before or after chapter 3 in either 45 a flat file or in XML. For this reason, the locator is the sole property preserved by a higher level node throughout the higher level node's scope. If the position is changed, then a new level (and sub-levels) is created.

This still leaves the problem of the scope of a higher level. 50 For example, if Chapter 2A is repealed and a new, unrelated chapter 2A immediately takes the place of the repealed Chapter 2A, a problem is potentially presented as to two overlapping scopes for the same provision. The scope of the original node has to be terminated, otherwise there are two 55 Chapter 2As in scope contemporaneously. The co-existence of two Chapter 2As poses a detrimental impact on the ability to navigate and search the legislation under consideration. In the situation in which the original Chapter 2A has a repeal stub, the original Chapter 2A's scope may overlap the new 60 Chapter 2A, since the stub may continue indefinitely in time. Among many possibilities, a repeal stub may be provided while Chapter 2A does not exist.

Other problems include: repeal or substitution of a higher level node; renumbering/relocation of a higher level node; 65 renaming (without renumbering/relocation) of a higher level node; elevation or demotion of a higher level node within the

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hierarchy, e.g. changing a part to a chapter or a division to a subdivision; and insertion/removal of an intermediate level heading node, requiring that nodes which follow and are/ were, according to their type, inferior to that heading node become/cease to be children of that node.

In order to resolve these problems, the following design rule is applied: Higher level nodes may have neither scope nor content. In other words, a non-terminal node must be a container only. A non-terminal node's only properties are a parent indicator, a position within the parent, and (optionally) a locator. Any content notionally belonging to such a node, such as a chapter title, is assigned to a new (terminal) child node. A (terminal) child node may contain a label, which is preferably a title, but can be or include other data related to the parent node. The new child node preserves the scope of the title, so (for example) a single chapter may possess a number of (temporally disjoint) title nodes.

Higher level scoping has a number of surprising but useful consequences. In particular, a higher level provision is, in itself, not subject to amendment. Thus, an instruction such as "Repeal Chapter 2A" actually terminates the scope of all of Chapter 2A's constituent terminal nodes. The chapter node, having no scope of its own, is unaffected.

Additionally, the previously described problem pertaining to the overlapping scope of the 2A repeal stub disappears. Embodiments of the invention utilise the following approaches. When Chapter 2A is repealed, the associated scope of all terminal nodes within Chapter 2A is terminated. In a first embodiment, a new Chapter 2A is enacted immediately after the original chapter is terminated. The new Chapter 2A has an associated scope commencing on the day after which the original Chapter 2A was repealed. In a second embodiment, a repeal stub is introduced. A repeal stub in the preferred embodiment is a title with an attribute marking this title as being of the type "repeal stub". The repeal stub has an associated scope with a start date corresponding to the date after which Chapter 2A was repealed. The repeal stub has the Chapter 2A node as a parent. If a new Chapter 2A is later enacted, the scope of the repeal stub is terminated and the scope of the terminal nodes of the new Chapter 2A will begin on the day after the end date of the repeal stub's scope.

Thus, a request "for Chapter 2A on date X" returns a description of Chapter 2A that was valid on that date. In the event that the request is for a date on which the chapter is repealed, the fact that the chapter is not in force, having been repealed on or before that date, will be returned.

A portion of Document Type Definition (DTD) code which is used to enable higher level scoping appears in Tables 2 to 8 below:

## TABLE 2

<!--

ENTITY: hlev-i

PURPOSE: Concatenation of the elements that make the Identification of a higher level element. Only to be used for levels in which the desc> can be MALTed - for levels in which the whole level should be MALTed (ie, section, reg, schedule) and for their sub-levels, use %lev-id;

<!ENTITY % hlev-id

"(target\*, label?, (desc, %amendments;)\*)"

```
TABLE 3
                                                                                       TABLE 5-continued
<!ELEMENT act
    (%hlev-id;,
                                                                                       (((%secreg;)*, division*)
                                                            5
     (%hnote; | %raw;)*,
                                                                                        (article+ | item+ | clause+) |
     (longtitle, %amendments;)+,
    preamble*,
                                                                                        (guide+) |
     (chapter* | part* | section*),
(schedule* | include+)*,
                                                                                        (unconverted+)))
    hist*)
                                                           10
                                                                                  <!ATTLTST part
<!ATTLIST act
                                                                                       id
    juris
         (cth | nsw| vic| qld | salwa| tas| act | nt| imp) \\ \#REQUIRED
                                                                                           CDATA
                                                                                           #IMPLIED
    year
         CDATA
                                                           15
                                                                                       next-id
         #REQUIRED
                                                                                           CDATA
    number
         CDATA
                                                                                           #IMPLIED
         #REQUIRED
                                                           20
                TABLE 4
                                                                                             TABLE 6
<!ELEMENT regulations
                                                                                  <!ELEMENT division
    (%hlev-id;,
                                                           25
     (%hnote; | %raw;)*,
                                                                                       (%hlev-id;,
          (chapter* | part* | reg*),
(schedule* | include+)*
                                                                                       (p | %hnote;)*,
                                                                                       (((%secreg;)*, subdivn*) |
                                                                                           (clause*, item*)))
<!ATTLIST regulations
                                                           30
    juris
         (cth|nsw|vic|q|d|sa|wa|tas|act|nt|imp)\\
                                                                                  <!ATTLIST division
         #REQUIRED
                                                                                       \operatorname{id}
                                                                                           CDATA
         CDATA
         #REQUIRED
                                                                                           #IMPLTED
                                                           35
    number
                                                                                       next-id
         CDATA
                                                                                           CDATA
         #REQUIRED
                                                                                           #IMPLIED
<!ELEMENT chapter
    (%hlev-id;,
     (%hnote;)*,
     (((%secreg;)*, part*) | article+))
<!ATTLIST chapter
                                                                                             TABLE 7
    id
         CDATA
                                                                                  <!ELEMENT subdivn
         #IMPLIED
                                                           45
                                                                                       (%hlev-id;,
    next-id
                                                                                        (%hnote;) *,
         CDATA
                                                                                        ((\%secreg;)+ \mid clause+))
         #IMPLIED
                                                                                  <!ATTLIST subdivn
                                                                                       id
                                                                                           CDATA
                                                           50
                                                                                           #IMPLIED
               TABLE 5
                                                                                       next-id
                                                                                           CDATA
    <!ELEMENT part
                                                                                           #IMPLIED
         (%hlev-id;,
         hist*,
                                                                                      TABLE 8
```

TABLE 8-continued

```
<! ELEMENT desc
    (#PCDATA | %refs; | %effect; | quote)*
<!ATTLIST desc
    %date-atts:
```

The DTD has been altered such that scoping is transferred from the higher level nodes to terminal nodes.

Consider an example consisting of an Act with two chapters, the second chapter containing two sections, as 15 scoping is extended to facilitate commentaries, subject indishown by the system 2100 of FIG. 21. A root node 2110 represents the Act. The root node 2110 has no parent, and all other nodes descend from the root node 2110. The first chapter of the Act is represented by a higher level node 2120. As a higher level node, node 2120 has neither scope nor 20 content. Node 2120 has the following properties: a parent, being the Act node 2110; a position within the parent node 2110, being 1; and an optional locator, being "Chapter 1". Node 2120 has two descendant nodes 2122, 2124. Node 25 2122 has the following properties: a parent, being the node 2120 identified by its locator "Chapter 1"; a position within the parent node 2120, being 1; an optional locator, being "Chapter 1 Description"; scope, being 1 Jan. 1998 onwards; and content relating to the title or textual description of the  $^{30}$ first chapter of the Act under consideration. Node 2124 has the following properties: a parent, being the node 2120 identified by its locator "Chapter 1"; a position within the parent node 2120, being 2; an optional locator, being "Chapter 1 Note"; scope, being 1 Jan. 1998 onwards; and content providing general notes or comments pertaining to the first chapter of the Act under consideration.

A second higher level node 2130 represents the second chapter of the Act. Node 2130 has two sections. Node 2130 40 has the following properties: parent, being the Act node 2110; a position within the parent node 2110, being 2; and an optional locator, being "Chapter 2A". Node 2130 has five child nodes: 2132, 2134, 2136, 2140 and 2150, each of which is a terminal node in this example. Node 2132 has the 45 properties: parent, being Chapter 2A; a position within the parent, being 1; an optional locator, being "Chapter 2A description"; scope, being 1 Jan. 1998-30 Jun. 1998; and content, being "Company Registration". Node 2134 has the properties: parent, being Chapter 2A; a position within the 50 parent, being 2; an optional locator, being "Chapter 2A description"; scope, being 1 Jul. 1998 onwards; and content, being "Registering a Company". Node 2136 has the properties: parent, being Chapter 2A; a position within the parent, being 3, an optional locator, being "Chapter 2A 55 note"; scope; and content. Node 2140 has the properties: parent, being Chapter 2A; a position within the parent, being 4; an optional locator, being "Section 11"; scope; and content. Node 2150 has the properties: parent, being Chapter 2A; a position within the parent, being 5; an optional locator, 60 being "Section 12"; scope; and content.

The different scopes of nodes 2132 and 2134 allow nodes 2132, 2134 to co-exist, without overlapping. Nodes 2132, 2134 may share the same locator, but the combination of locator and scope uniquely identifies the nodes. Nodes 2132, 65 2134 reflect the amendment of the title of Chapter 2A from "Company Registration" to "Registering a Company". The

scopes of nodes 2132, 2134 indicate that the amendment came into effect on 1 Jul. 1998.

In accordance with a further embodiment, higher level ces and similar material. When considering legislation, any amendment results in the production of a modified portion. However, when considering commentaries, two types of amendment to the commentary are possible. In the first scenario, corresponding to the legislation example, the scope of the current predefined portion of commentary is terminated and a new predefined portion is provided. The new predefined portion has a scope commencing on the day after the expiration of the current predefined portion. In the second possible scenario, the current predefined portion of the commentary is amended without a second predefined portion being created.

The scope of commentary portions is extended to include three dates: a start date, an update date and an end date. Referring to FIG. 22A, a screen shot 2260 shows a commentary. The commentary was created on 1 Jul. 2000, as seen from the amendment bar 2265. The commentary has the following scope properties: start date of 1 Jul. 2000, no update date and no end date. FIG. 22B shows a screen shot 2270 of the commentary of FIG. 22A at a later date. The amendment bar 2275 indicates that the commentary was last updated on 1 Sep. 2000. Thus, the scope of the commentary now has a start date of 1 Jul. 2000, an update date of 1 Sep. 2000 and no end date. FIG. 22C shows a further screen shot 2280 of the commentary of FIGS. 22A and 22B at a vet later date. The amendment bar 2284 indicates that at least one further amendment has been applied to the commentary since the update of 1 Sep. 2000 indicated at 2275 in FIG. 22B. The amendment bar 2285 of FIG. 22C shows that the last update date of the commentary is 1 Oct. 2000. Therefore, the scope properties of the commentary now read: First portion: start date of 1 Jul. 2000, end date of 30 Sep. 2000; Second portion: start date of 1 Oct. 2000, and no end date.

In a further embodiment, XML data may be divided into predefined portions and stored as a collection of flat files. In an example, the flat files take the form of a relational database. There is a one to one correspondence between the XML data and the relational database. The hierarchy of the XML data is expressed via the implementation of higher level scoping. A single record is provided with an identifier and other terminal nodes are provided in which to store the remainder of the information.

The process for navigating in a multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language can be implemented using a computer program product in conjunction with a computer system 2300 as shown in FIG. 23. In particular, the process for navigating in a multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded

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using a markup language can be implemented as software, or computer readable program code, executing on the computer system 2300.

Similarly, the process for publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language may also be implemented using a computer program product in conjunction with the computer system 2300 shown in FIG. 23.

The computer system 2300 includes a computer 2350, a video display 2310 and input devices 2330, 2332. In addition, the computer system 2300 can have any of a number of other output devices including line printers, laser printers, plotters, and other reproduction devices connected to the computer 2350. The computer system 2300 can be connected to one or more other computers via a communication input/output (I/O) interface 2364 using an appropriate communication channel 2340 such as a modem communications path, an electronic network, or the like. The network may include a local area network (LAN), a wide area network (WAN), an Intranet, and/or the Internet 2320.

The computer 2350 includes the control module 2368, a memory 2370 that may include random access memory (RAM) and read-only memory (ROM), input/output (I/O) interfaces 2364, 2372, a video interface 2360, and one or more storage devices generally represented by the storage device 2362. The control module 2368 is implemented using a central processing unit (CPU) that executes or runs a computer readable program code that performs a particular function or related set of functions.

The video interface 2360 is connected to the video display 2310 and provides video signals from the computer 2350 for display on the video display 2310. User input to operate the computer 2350 can be provided by one or more of the input 35 devices 2330, 2332 via the I/O interface 2372. For example, a user of the computer 2350 can use a keyboard as I/O interface 2330 and/or a pointing device such as a mouse as I/O interface 2332. The keyboard and the mouse provide input to the computer 2350. The storage device 2362 can consist of one or more of the following: a floppy disk, a hard disk drive, a magneto-optical disk drive, CD-ROM, magnetic tape or any other of a number of non-volatile storage devices well known to those skilled in the art. Each of the elements in the computer system 2350 is typically connected to other devices via a bus 2380 that in turn can consist of data, address, and control buses.

The method steps for navigating in a multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a 50 markup language are effected by instructions in the software that are carried out by the computer system 2300. Again, the software may be implemented as one or more modules for implementing the method steps.

In particular, the software may be stored in a computer 55 readable medium, including the storage device 2362 or that is downloaded from a remote location via the interface 2364 and communications channel 2340 from the Internet 2320 or another network location or site. The computer system 2300 includes the computer readable medium having such software or program code recorded such that instructions of the software or the program code can be carried out. The use of the computer system 2300 preferably effects advantageous apparatuses for navigating a multidimensional space containing an electronic publication formed from predefined 65 portions of text based data encoded using a markup language and for publishing an electronic publication formed from

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predefined portions of text based data encoded using a markup language in accordance with the embodiments of the invention

The computer system 2300 is provided for illustrative purposes and other configurations can be employed without departing from the scope and spirit of the invention. The foregoing is merely an example of the types of computers or computer systems with which the embodiments of the invention may be practised. Typically, the processes of the embodiments are resident as software or a computer readable program code recorded on a hard disk drive as the computer readable medium, and read and controlled using the control module 2368. Intermediate storage of the program code and any data including entities, tickets, and the like may be accomplished using the memory 2370, possibly in concert with the storage device 2362.

In some instances, the program may be supplied to the user encoded on a CD-ROM or a floppy disk (both generally depicted by the storage device 2362), or alternatively could be read by the user from the network via a modem device connected to the computer 2350. Still further, the computer system 2300 can load the software from other computer readable media. This may include magnetic tape, a ROM or integrated circuit, a magneto-optical disk, a radio or infrared transmission channel between the computer and another device, a computer readable card such as a PC card, and the Internet 2320 and Intranets including email transmissions and information recorded on Internet sites and the like. The foregoing are merely examples of relevant computer readable media. Other computer readable media may be practised without departing from the scope and spirit of the invention.

The process for navigating in a multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language can be realised in a centralised fashion in one computer system 2300, or in a distributed fashion where different elements are spread across several interconnected computer systems.

The process for publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language may also be implemented using a computer program product in conjunction with the computer system 2300 of FIG. 23 in a manner similar to that which has just been described.

Computer program modules or computer program in the present context mean any expression, in any language, code or notation, of a set of instructions intended to cause a system having an information processing capability to perform a particular function either directly or after either or both of the following: a) conversion to another language, code or notation or b) reproduction in a different material form

In the foregoing manner, a method, an apparatus, and a computer program product for navigating in a multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language are disclosed. Further, a method, an apparatus, and a computer program product for publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language are disclosed. While only a small number of embodiments are described, it will be apparent to those skilled in the art in view of this disclosure that numerous changes and/or modifications can be made without departing from the scope and spirit of the invention.

## APPENDIX A

## **Example Research**

SOCIAL SECURITY ACT 1991 No 46

Updated as at 9 August 1996

# A 1. Amendments to Section at 9/8/96

S.4 am. Nos. 74, 116 and 194, 1991; No. 81, 1992; No. 36, 1993; Nos. 55, 63 and 184, 1994; Nos. 104 and 105, 1995

### A 2. Amendments to Section at 10/7/95

S.4 am. Nos. 74, 116 and 194, 1991; No. 81, 1992; No, 36, 1993; Nos. 55, 63 and 184, 1994

# B. Commencement Information for Act No 105 of 1995 contained in Reprint

Social Security(Non-Budget Measures) Legislation Amendment Act 1995

Number Year Date of Assent Commencement

105 1995 29 Sept 1995

Subdiv. A of Div. 2 of Part 2 (s.

4): 1 July 1993

Ss. 8 and 9: 1 July 1995

S. 10: 1 Apr 1993

Div. 5 of Part 2 (ss. 12 and 13):

20 Sept 1994 (ze)

Ss. 17(c), (d) and 18: 1 Jan 1996

Div. 15 of Part 2 (s. 37): 29 Nov 1993

Div. 18 of Part 2 (ss. 41-48): 20 Mar 1995

S. 49 (a): 12 Mar 1992

S. 49 (b): 1 July 1992

S. 49(c): 28 Jan 1993

S. 49(d): 1 Mar 1993

S. 49(e): 24 Dec 1993

S. 49(f): 1 Jan 1994

Remainder: Royal Assent

# C 1. Text of Section at 9/8/96

## bold text indicates amendments made by NO 105 of 1995.

### SECT 4

Family relationships definitions-couples

4. (1) (1) In this Act, unless the contrary intention appears:

"approved respite care" has the meaning given by subsection (9);

"armed services widow" means a woman who was the partner of:

(a) a person who was a veteran for the purposes of any provisions of the Veterans'

Entitlements Act; or

- (b) a person who was a member of the forces for the purposes of Part IV of that Act: or
- (c) a person who was a member of a peacekeeping force for the purposes of Part IV of that Act; immediately before the death of the person;

"armed services widower" means a man who was the partner of:

- (a) a person who was a veteran for the purposes of any provisions of the Veterans' Entitlements Act; or
  - (b) a person who was a member of the Forces for the purposes of Part IV of that Act; or
- (c) a person who was a member of a peacekeeping force for the purposes of Part IV of that Act; immediately before the death of the person;

"illness separated couple" has the meaning given by subsection (7);

"member of a couple" has the meaning given by subsections (2), (3), (3A) [reference to new section added] and (6);

"partner", in relation to a person who is a member of a couple, means the other member of the couple:

"partnered" has the meaning given by subsection (11);

"partnered (partner getting benefit)" has the meaning given by subsection (11);

"partnered (partner getting neither pension nor benefit)" has the meaning given by subsection (11):

"partnered (partner getting pension)" has the meaning given by subsection (11);

"partnered (partner getting pension or benefit)" has the meaning given by subsection (11);

"partnered (partner in gaol)" has the meaning given by subsection (11);

"respite care couple" has the meaning given by subsection (8).

# Member of a couple-general

- 4 (2) Subject to subsection (3), a person is a member of a couple for the purposes of this Act if:
- (a) the person is legally married to another person and is not, in the Secretary's opinion (formed as mentioned in subsection (3)), living separately and apart from the other person on a permanent or indefinite [Words added] basis; or
  - (b) all of the following conditions are met:
- (i) the person has a relationship [Words is living replaced] with a person of the opposite sex (in this paragraph called the "partner");
  - (ii) the person is not legally married to the partner;
- (iii) the relationship between the person and the partner is, in the Secretary's opinion (formed as mentioned in subsections (3) and (3A)[Words added]), a marriage-like relationship;
- (iv) both the person and the partner are over the age of consent applicable in the State or Territory in which they live;
- (v) the person and the partner are not within a prohibited relationship for the purposes of section 23B of the Marriage Act 1961.

Note: a prohibited relationship for the purposes of section 23B of the Marriage Act 1961 is a relationship between a person and:

- . an ancestor of the person; or
- .. a descendant of the person; or
- a brother or sister of the person (whether of the whole blood or the part-blood).

Member of a couple-criteria for forming opinion about relationship

- 4 (3) In forming an opinion about the relationship between 2 people for the purposes of paragraph (2) (a) or subparagraph (2) (b) (iii), the Secretary is to have regard to all the circumstances of the relationship including, in particular, the following matters:
  - (a) the financial aspects of the relationship, including:
    - (i) any joint ownership of real estate or other major assets and any joint liabilities: and
- (ii) any significant pooling of financial resources especially in relation to major financial commitments; and
  - (iii) any legal obligations owed by one person in respect of the other person; and
  - (iv) the basis of any sharing of day-to-day household expenses;
  - (b) the nature of the household, including:
    - (i) any joint responsibility for providing care or support of children: and
    - (ii) the living arrangements of the people; and
    - (iii) the basis on which responsibility for housework is distributed;
  - (c) the social aspects of the relationship, including:
    - (i) whether the people hold themselves out as married to each other; and
- (ii) the assessment of friends and regular associates of the people about the nature of their relationship; and
  - (iii) the basis on which the people make plans for, or engage in, joint social activities;
  - (d) any sexual relationship between the people;
  - (e) the nature of the people's commitment to each other, including:
    - (i) the length of the relationship; and
- (ii) the nature of any companionship and emotional support that the people provide to each other; and
  - (iii) whether the people consider that the relationship is likely to continue indefinitely; and
  - (iv) whether the people see their relationship as a marriage-like relationship.
- 4 (3A) The Secretary must not form the opinion that the relationship between a person and his or her partner is a marriage-like relationship if the person is living separately and apart from the partner on a permanent or indefinite basis. [Subsection added]

# C 2. Text of Section at 10/7/95 prior

SECT 4

Family relationships definitions - couples

4. SECT 4

Family relationships definitions-couples

4. (1) In this Act, unless the contrary intention appears: